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Erratum: Line operators on $S^1 \times \mathbb{R}^3$ and quantization of the Hitchin moduli space

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Due to an error in the evaluation of the classical action (2.2), the following changes are required. The second equation in (2.13) should be corrected to

$$b \equiv \frac{\Theta}{2\pi} - \frac{4\pi i R}{g^2}\Phi_9^{(\infty)} + \frac{i\vartheta}{2\pi}R\Phi_0^{(\infty)} \in \mathfrak{t}_{\mathbb{C}}^* .$$

The first equation in (3.21) should not have a $A_\tau^{(\infty)}$-dependent term and should be replaced by

$$S_{\text{vec}} = \frac{1}{g^2\delta}\left(4\pi^2 R + \frac{g^2\vartheta^2 R}{16\pi^2}\right)\text{Tr}B^2 .$$

Equation (3.22) should also be corrected to

$$S_{\text{cl}}(B) \equiv S_{\text{vec}} + S_{\text{bdry}} = -\frac{8\pi^2 R}{g^2}\text{Tr}\left[\Phi_9^{(\infty)}B\right] + \vartheta R\ \text{Tr}\left[\Phi_0^{(\infty)}B\right] .$$

We thank Daigo Honda for pointing out this error. We note that in terms of $\Theta' := \Theta - \vartheta R A_\tau^{(\infty)}$, we can also write $b = \frac{\Theta'}{2\pi} - \frac{4\pi i R}{g^2}\Phi_9^{(\infty)} + \frac{\vartheta}{2\pi}a$, an expression more similar to the one before correction. The meaning of Θ' can be understood by carefully performing dimensional reduction and 3d abelian duality: $2\pi R A_\tau^{(\infty)}$ and Θ' are the vevs of linear combinations of scalars that diagonalize the kinetic terms.

In addition, the second line of equation (6.15) should be replaced by

$$\sum_{k\neq l} e^{2\pi i(b_k+b_l)}\left(\frac{\prod_{j\neq k,l}\prod_{\pm}\sin\pi(a_{kj}\pm m)\sin\pi(a_{lj}\pm m)}{\prod_{j\neq k,l}\prod_{\pm}\sin\pi(a_{kj}\pm\lambda/2)\sin\pi(a_{lj}\pm\lambda/2)}\right)^{1/2}\frac{\prod_{\pm}\sin\pi(a_{kl}\pm m+\lambda/2)}{\sin\pi(a_{kl}+\lambda)\sin\pi a_{kl}} . \quad (1)$$

The first two factors, classical and one-loop contributions respectively, were missing in the original expression. We are grateful to Chih-Kai Chang, Heng-Yu Chen, Dharmesh Jain, and Norton Lee for noticing the need for such a correction.

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